

Grand Reduction Sale

New Christmas Novelties

INCLUDING

NOW ON AT

Corner Fort and
Beretania Sts

Kam Chong Company

Corner Fort and
Beretania Sts

Oriental Holiday Suggestions

CHINESE AND JAPANESE SILK GOODS make very acceptable Christmas presents. Our line was especially selected to suit the requirements of the Honolulu trade. The following are a few suggestions:

MANDARIN COATS.

CANTON LINEN SHIRT WAIST AND DRESS PATTERNS.

PONGEE SILK SHIRT WAIST AND DRESS PATTERNS.

CANTON LINEN EMBROIDERED TABLE COVERS, CENTER PIECES AND DOILIES.

PILLOW COVERS AND BUREAU SCARFS, HANDBAGS, ETC.

SILK CAPES AND SILK SHAWLS IN ALL SIZES AND ALL COLORS.

SANDAL WOOD EMBROIDERED SILK FANS.
HAND EMBROIDERED SILK HAND BAGS.

INSPECT OUR STOCK BEFORE MAKING YOUR HOLIDAY PURCHASES.

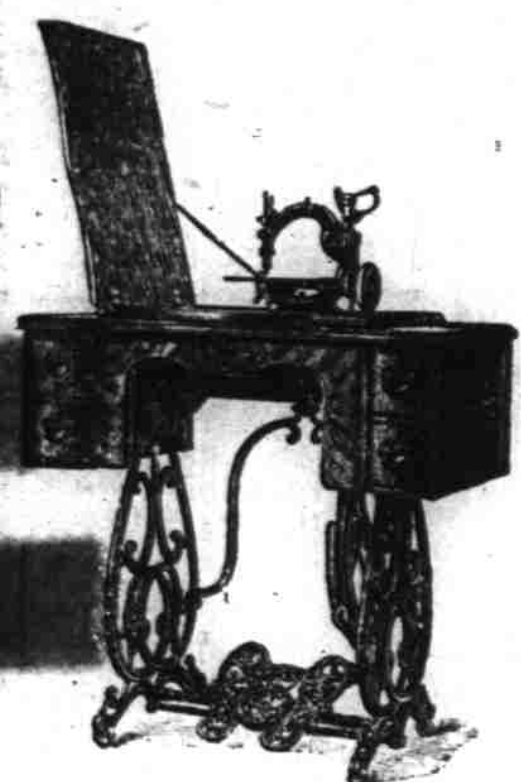
Yee Chan & Co.

CORNER BETHEL AND KING STS.

Why Not Give Her A

N. H.

Automatic Sewing Machine?



Special
Holiday Price
\$40.00

REGULAR PRICE \$50.00.

Your choice of Box Top
or Drop Head styles in
oak and mahogany finishes.

Only a limited number,
so get your order in
early.

E. O. HALL & SON, Ltd.

Household Department



LAUNDRY MESSENGER BOY PARCEL DELIVERY

PHONE 3461

We know everybody and understand the business.

WIDE SCOPE OF WORK DONE BY SUGAR PLANTERS

(Continued from Page 10)

reached, very great decreases in the pressure produced very small additional amounts of juice. The number of pressings, however, was found to be of great importance, four separate pressings at 4740 lbs. per sq. in. affording 81 per cent of juice, while one single pressing at 11,940 lbs. per sq. in. only afforded 67.6 per cent of juice. It was also found that the finer the material the greater was the quantity of juice expressed. The results of these experiments were interpreted as tending to favor multiple crushings at moderate pressures as a more effective process than a less number of crushings at greater pressure.

A mathematical analysis of the results obtained allowed Mr. Deerr to reach a number of conclusions with reference to their application to practical milling, namely:

(a) The pressure exerted by the bagasse at any point in its passage through a mill.

(b) The power absorbed in friction on the trash bar.

(c) The actual work done in compressing the fiber, which was found to be absolutely independent of the way in which pressure was applied.

(d) With settings such as are in present use in the later mills of a train it is estimated that the pressure between the top and front rollers is about 140 of that between the top and back roller.

The results of this investigation were discussed in detail by Mr. Deerr in Bulletin No. 38, of the Agricultural and Chemical Series.

The Heat of Combustion of Bagasse from Hawaiian Cane.—The object of this work, undertaken by Dr. R. S. Norris, was to find the thermal value of bagasse from different localities, in order to determine whether the great variation in the percentage consumption of the bagasse produced in different factories is due to a variation in the thermal value of bagasse.

For comparing different kinds of cane, the fiber was used in place of bagasse, to avoid any effect of variation in sugar content. The fiber from the two most commonly cultivated canes, Lahaina and Yellow Caledonia, from less frequently cultivated varieties like Rose Bamboo and D. 1135, and from many Hawaiian seedlings, were tested by Dr. Norris, and but very little variation found in the thermal values. The fiber from cane from different parts of the islands likewise showed but little variation. From the results of all the tests it was concluded that the average thermal value of Hawaiian bagasse is 4500 calories.

A few determinations were made of the thermal value of the fiber from different parts of the cane—the rind and pith, the nodes and internodes. In Bulletin No. 40 the results of this investigation are discussed in detail and calculations are given of the heat of combustion that is available, which constitutes the true fuel value. Determinations are also given of the thermal value of several subsidiary fuels used in cane sugar factories—molasses, field trash, and crude petroleum.

FERTILIZERS

Of the 466 fertilizers reported, 250 were from samples taken by Mr. J. F. Melanphy in Honolulu; 137 from samples forwarded from San Francisco by Messrs. Curtis and Thompson; 5 from samples sent by agents with requests for re-analysis; and the balance, 74 from samples sent directly by one plantation. Since the first of the year this plantation has discontinued forwarding its own fertilizer samples, and shipments to this plantation are being sampled by our agent in Honolulu. Of the 461 samples reported by the station, 36 fell below the respective guarantees, or 7.8 per cent, indicating a rebate of \$2,533.60. This amounts to \$79.83 per fertilizer lot on which rebate was indicated, or \$5.54 per fertilizer lot reported. By fertilizer lot is meant the entire quantity or shipment represented by the sample.

AGRICULTURAL WORK

The preliminary work in connection with the establishment of this important branch of the experimental station was referred to in the last annual report to the committee, and I am now able to report that the new substation has been equipped and organized to meet all present requirements, and 78 acres were planted to cane during the season just closed.

The laying out of the Waipio experiments was conducted under the supervision of Mr. H. P. Agee, agriculturist. A plan was adopted by Messrs. Agee and Naquin, which, though entailing extra difficulties and

expense at the outset, serves to great advantage in facilitating all subsequent operations, such as planting, fertilizing and harvesting; and serves to minimize the chance of error in securing accurate results in these important field tests.

To have arranged these experiments under the Hawaiian system of irrigation as ordinarily practiced, we would have met with a field of curved rows conforming in general to curved and unparallel level ditches and interspersed with short rows. To adopt the checker-board system of plant experiments to such a field would have presented untold difficulties. The small plots would of necessity have been of different sizes, and owing to the "hapas," or short rows, occurring at varying intervals the width and length of the rows would also have been variable factors.

It is fortunate therefore that after due consideration it was found possible on a large portion of the available area to utilize straight and parallel level ditches, rows, and water courses, without in any way altering the principle of the general practice of irrigation.

The field was not sufficiently level to utilize any single direction of rows throughout but by dividing the area into large blocks and employing the same direction of rows throughout each of these blocks the purpose was accomplished. The system of straight rows admitted of each row being the same width, and in order to avoid an accumulation of errors in plowing out these rows, Mr. Agee measured them off en bloc—that is, in making five-foot rows, ten equidistant rows were placed within a 50-foot strip, and thus the inevitable errors that occur in attempting to plow furrows of an exact width are compensative rather than accumulative.

With this scheme as developed by Messrs. Agee and Naquin it does not matter whether or not the water courses are perpendicular to the rows. Where they are perpendicular to the rows the plots are equal rectangles, where otherwise the plots are parallelograms of equal area. In order to have a pathway between the plots a space six feet wide (measured with the direction of the rows) was left for each water course. This area is not included in the area of the plots.

The experiments themselves are now under way, having been planted out June 17 to July 12. Their purpose may be briefly outlined as follows:

Experiment A. (Irrigation Test).—This embraces a comparison of irrigation at 7-day, 14-day, and 28-day intervals with both Lahaina and Yellow Caledonia cane. This test is more or less preliminary in character as the more thorough irrigation experiments have been reserved for two years hence, when the additional area will be taken over by the substitution. The test, however, should result in data of an interesting nature, not only in showing the comparative yields with different periods between irrigations, but more particularly, from a practical standpoint, in offering information as to the comparative water requirements of our two standard varieties of cane.

Experiment B. (Fertilizer Test).—This experiment deals with the question of when to apply dressings of nitrate of soda. It compares applications in March, April, May and June, together with fractional applications extending over three months, and fractional applications extending over four months. The practice of applying nitrate of soda, so universal in these islands, varies greatly in respect to the time of application. The results to be obtained from Experiment B will go far toward substituting definite facts where opinion is now the prevailing guide.

Experiment C. (Fertilizer Test).—The time of applying the regular mixed fertilizer is no less an important matter than that of nitrate applications, and it is no less a mooted question to judge by the present difference of practice. The experiment is designed to give data of a definite and reliable nature as to when to fertilize. It embraces a comparison of fertilizer applied in August and fertilizer applied in March, and includes a series of schemes of fertilization whereby different proportions of the fertilizer are applied at different seasons. In other words, it is meant to determine how the greatest efficiency can be obtained from a given outlay in purchasing fertilizers.

PLANTATION SUBSTATIONS
The large stripping substation experiment with the Striped Tip variety at Honokaa was harvested during June and July.

This experiment has special significance in that in all likelihood it

closes a long line of experimentation on the question of stripping. As already mentioned the test applied to the Striped Tip cane. The nature of this cane led to the belief that it might require stripping, even though the Lahaina and Yellow Caledonia varieties were not benefited by the practice.

The results do not show any loss from stripping, as has oftentimes been the case with other varieties, in fact, very slight increases in yield were found in the stripped plots; but these gains were so trivial as to offer nothing in support of stripping from an economic standpoint.

SEEDLING VARIETIES

The year's work with seedling varieties has brought out more strikingly than ever the fact that a number of these new canes possess distinct properties of early maturity. There remains little question that several of these varieties are superior to the standard canes for early harvesting on irrigated plantations. For short ratooning purposes there are a number which give remarkable promise. In the short ratoon variety comparisons at the station field H. 20, D. 1135, H. 99, H. 333, and H. 109 gave in sugar per acre: 9.06, 8.19, 8.07, 7.67 and 7.65 tons respectively; against 6.63 on the part of Yellow Caledonia and 5.12 tons from Lahaina.

In another variety experiment it was found that a decided deterioration took place in a number of the most promising canes between January (18 months old) and March. The January results served to substantiate in a measure the good showing made in 1911 by H. 20, H. 240, H. 146, H. 25, H. 197, H. 227, H. 27, and D. 1135. They also pointed out H. 68, H. 135, H. 205, and H. 90 (not heretofore tested) as being canes deserving further comparison.

The March results brought out very forcibly the variable qualities of the different varieties as regards maturity, and deterioration and lead to the conclusion that it is an unsound practice to depend on a single variety of cane for a grinding season extending over a period of nine months or more. Obviously it will prove more profitable to harvest an early maturing cane at the beginning of the season, then proceed to varieties of average maturing qualities, and end the season with a late maturing cane, or, as Mr. Agee has pointed out, with short ratoons from an early maturing variety.

The work of testing and extending the seedling varieties has progressed appreciably during the year, and there are some plantations with considerable area devoted to the new varieties.

PROPAGATION OF NEW SEEDLINGS

The propagation of 1911 consisted of several hundred seedlings. These were examined in March, and after discarding the worthless ones, there remain thirty-seven which are now being grown for more severe testing. They have been numbered from H. 404 to H. 440 inclusive.

The propagation of 1912, owing to lack of space, is confined to a dozen or more volunteer seedlings of unknown parentage which were found about the station plots. With the enlarged field area now available the station will be able to extend this work very materially in the future.

GREEN MANURING

The year's work along this line has strengthened our previous statements to the effect that green manuring may be utilized advantageously in connection with cane culture in these islands. At first sight it appeared that on certain irrigated plantations the expense of growing a rotation crop might be almost prohibitive, especially if it entailed a complete re-ditching and relaying of ditches. The best method, most likely, will be to select a field which is no longer to be continued in ratoons and harvest it during the early part of the season. Light furrows may be plowed along the old cane rows in such manner as to admit of legumes being planted; at the same time this plowing should not be such as to destroy the original level ditches and water courses used for irrigation purposes.

RECORD OF FAILURES.

Liabilities of commercial failures thus far reported for November amount to \$6,266,929, of which \$2,803,617 are in manufacturing, \$2,871,480 in trading and \$1,251,832 in other commercial lines. Failures this week numbered 271 in the United States against 205 last year, and 37 in Canada compared with 24 a year ago.—Bun's Review.

Clean Meat

GOES A LONG WAY TOWARD KEEPING PEOPLE HEALTHY. WHEN YOU ARE BUYING MEAT FOR LESS THAN WE CHARGE, LOOK TO ITS CONDITION.

Metropolitan Meat Market

HEILBRON & LOUIS, Props. TELEPHONE 3448

Phone 1874, 1876, 1878, 1880, 1882, 1884, 1886, 1888, 1890, 1892, 1894, 1896, 1898, 1900, 1902, 1904, 1906, 1908, 1910, 1912, 1914, 1916, 1918, 1920, 1922, 1924, 1926, 1928, 1930, 1932, 1934, 1936, 1938, 1940, 1942, 1944, 1946, 1948, 1950, 1952, 1954, 1956, 1958, 1960, 1962, 1964, 1966, 1968, 1970, 1972, 1974, 1976, 1978, 1980, 1982, 1984, 1986, 1988, 1990, 1992, 1994, 1996, 1998, 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018, 2020, 2022, 2024, 2026, 2028, 2030, 2032, 2034, 2036, 2038, 2040, 2042, 2044, 2046, 2048, 2050, 2052, 2054, 2056, 2058, 2060, 2062, 2064, 2066, 2068, 2070, 2072, 2074, 2076, 2078, 2080, 2082, 2084, 2086, 2088, 2090, 2092, 2094, 2096, 2098, 2100, 2102, 2104, 2106, 2108, 2110, 2112, 2114, 2116, 2118, 2120, 2122, 2124, 2126, 2128, 2130, 2132, 2134, 2136, 2138, 2140, 2142, 2144, 2146, 2148, 2150, 2152, 2154, 2156, 2158, 2160, 2162, 2164, 2166, 2168, 2170, 2172, 2174, 2176, 2178, 2180, 2182, 2184, 2186, 2188, 2190, 2192, 2194, 2196, 2198, 2200, 2202, 2204, 2206, 2208, 2210, 2212, 2214, 2216, 2218, 2220, 2222, 2224, 2226, 2228, 2230, 2232, 2234, 2236, 2238, 2240, 2242, 2244, 2246, 2248, 2250, 2252, 2254, 2256, 2258, 2260, 2262, 2264, 2266, 2268, 2270, 2272, 2274, 2276, 2278, 2280, 2282, 2284, 2286, 2288, 2290, 2292, 2294, 2296, 2298, 2300, 2302, 2304, 2306, 2308, 2310, 2312, 2314, 2316, 2318, 2320, 2322, 2324, 2326, 2328, 2330, 2332, 2334, 2336, 2338, 2340, 2342, 2344, 2346, 2348, 2350, 2352, 2354, 2356, 2358, 2360, 2362, 2364, 2366, 2368, 2370, 2372, 2374, 2376, 2378, 2380, 2382, 2384, 2386, 2388, 2390, 2392, 2394, 2396, 2398, 2400, 2402, 2404, 2406, 2408, 2410, 2412, 2414, 2416, 2418, 2420, 2422, 2424, 2426, 2428, 2430, 2432, 2434, 2436, 2438, 2440, 2442, 2444, 2446, 2448, 2450, 2452, 2454, 2456, 2458, 2460, 2462, 2464, 2466, 2468, 2470, 2472, 2474, 2476, 2478, 2480, 2482, 2484, 2486, 2488, 2490, 2492, 2494, 2496, 2498, 2500, 2502, 2504, 2506, 2508, 2510, 2512, 2514, 2516, 2518, 2520, 2522, 2524, 2526, 2528, 2530, 2532, 2534, 2536, 2538, 2540, 2542, 2544, 2546, 2548, 2550, 2552, 2554, 2556, 2558, 2560, 2562, 2564, 2566, 2568, 2570, 2572, 2574, 2576, 2578, 2580, 2582, 2584, 2586, 2588, 2590, 2592, 2594, 2596, 2598, 2600, 2602, 2604, 2606, 2608, 2610, 2612, 2614, 2616, 2618, 2620, 2622, 2624, 2626, 2628, 2630, 2632, 2634, 2636, 2638, 2640, 2642, 2644, 2646, 2648, 2650, 2652, 2654, 2656, 2658, 2660, 2662, 2664, 2666, 2668, 2670, 2672, 2674, 2676, 2678, 2680, 2682, 2684, 2686, 2688, 2690, 2692, 2694, 2696, 2698, 2700, 2702, 2704, 2706, 2708, 2710, 2712, 2714, 2716, 2718, 2720, 2722, 2724, 2726, 2728, 2730, 2732, 2734, 2736, 2738, 2740, 2742, 2744, 2746, 2748, 2750, 2752, 2754, 2756, 2758, 2760, 2762, 2764, 2766, 2768, 2770, 2772, 2774, 2776, 2778, 2780, 2782, 2784, 2786, 2788, 2790, 2792, 2794, 2796, 2798, 2800, 2802, 2804, 2806, 2808, 2810, 2812, 2814, 2816, 2818, 2820, 2822, 2824, 2826, 2828, 2830, 2832, 2834, 2836, 2838, 2840, 2842, 2844, 2846, 2848, 2850, 2852, 2854, 2856, 2858, 2860, 2862, 2864, 2866, 2868, 2870, 2872, 2874, 2876, 2878, 2880, 2882, 2884, 2886, 2888, 2890, 2892, 2894, 2896, 2898, 2900, 2902, 2904, 2906, 2908, 2910, 2912, 2914, 2916, 2918, 2920, 2922, 2924, 2926, 2928, 2930, 2932, 2934, 2936, 2938, 2940, 2942, 2944, 2946, 2948, 2950, 2952, 2954, 2956, 2958, 2960, 2962, 2964, 2966, 2968, 2970, 2972, 2974, 2976, 2978, 2980, 2982, 2984, 2986, 2988, 2990, 2992, 2994, 2996, 2998, 3000, 3002, 3004, 3006, 3008, 3010, 3012, 3014, 3016, 3018, 3020, 3022, 3024, 3026, 3028, 3030, 3032, 3034, 3036, 3038, 3040, 3042, 3044, 3046, 3048, 3050, 3052, 3054, 3056, 3058, 3060, 3062, 3064, 3066, 3068, 3070, 3072, 3074, 3076, 3078, 3080, 3082, 3084, 3086, 3088, 3090, 3092, 3094, 3096, 3098, 3100, 3102, 3104, 3106, 3108, 3110, 3112, 3114, 3116, 3118, 3120, 3122, 3124, 3126, 3128, 3130, 3132, 3134, 3136, 3138, 3140, 3142, 3144, 3146, 3148, 3150, 3152, 3154, 3156, 3158, 3160, 3162, 3164, 3166, 3168, 3170, 3172, 3174, 3176, 3178, 3180, 3182, 3184, 3186, 3188, 3190, 3192, 3194, 3196, 3198, 3200, 3202, 3204, 3206, 3208, 3210, 3212, 3214, 3216, 3218, 3220, 3222, 3224, 3226, 3228, 3230, 3232, 3234, 3236, 3238, 3240, 3242, 3244, 3246, 3248, 3250, 3252, 3254, 3256, 3258, 3260, 3262, 3264, 3266, 3268, 3270, 3272, 3274, 3276, 3278, 3280, 3282, 3284, 3286, 3288, 3290, 3292, 3294, 3296, 3298, 3300, 3302, 3304, 3306, 3308, 3310, 3312, 3314, 3316, 3318, 3320, 3322, 3324, 3326, 3328, 3330, 3332, 3334, 3336, 3338, 3340, 3342, 3344, 3346, 3348, 3350, 3352, 3354, 3356, 3358, 3360, 3362, 3364, 3366, 3368, 3370, 3372, 3374, 3376, 3378, 3380, 3382, 3384, 3386, 3388, 3390, 3392, 3394, 3396, 3398, 3400, 3402, 3404, 3406, 3408, 3410, 3412, 3414, 3416, 3418, 3420, 3422, 3424, 3426, 3428, 3430, 3432, 3434, 3436, 3438, 3440, 3442, 3444, 3446, 3448, 3450, 3452, 3454, 3456, 3458, 3460, 3462, 3464, 3466, 3468, 3470, 3472, 3474, 3476, 3478, 3480, 3482, 3484, 3486, 3488, 3490, 3492, 3494, 3496, 3498, 3500, 3502, 3504, 3506, 3508, 3510, 3512, 3514, 3516, 3518, 3520, 3522, 3524, 3526, 3528, 3530, 3532, 3534, 3536, 3538, 3540, 3542, 3544, 3546, 3548, 3550, 3552, 3554, 3556, 3558, 3560, 3562, 3564, 3566, 3568, 3570, 3572, 3574, 3576, 3578, 3580, 3582, 3584, 3586, 3588, 3590, 3592, 3594, 3596, 3598, 3600, 3602, 3604, 3606, 3608, 3610, 3612, 3614, 3616, 3618, 3620, 3622, 3624, 3626, 3628, 3630, 3632, 3634, 3636, 3638, 3640, 3642, 3644, 3646, 3648, 3650, 3652, 3654, 3656, 3658, 3660, 3662, 3664, 3666, 3668, 3670, 3672, 3674, 3676, 3678, 3680, 3682, 3684, 3686, 3688, 3690, 3692, 3694, 3696, 3698, 3700, 3702, 3704, 3706, 3708, 3710, 3712, 3714, 3716, 3718, 3720, 3722, 3724, 3726, 3728, 3730, 3732, 3734, 3736, 3738, 3740, 3742, 3744, 3746, 3748, 3750, 3752, 3754, 3756, 3758, 3760, 3762, 3764, 3766, 3768, 3770, 3772, 3774, 3776, 3778, 3780, 3782, 3784, 3786, 3788, 3790, 3792, 3794, 3796, 3798, 3800, 3802, 3804, 3806, 3808, 3810, 3812, 3814, 3816, 3818, 3820, 3822, 3824, 3826, 3828, 3830, 3832, 3834, 3836, 3838, 3840, 3842, 3844, 3846, 3848, 3850, 3852, 3854, 3856, 3858, 3860, 3862, 3864, 3866, 3868, 3870, 3872, 3874, 3876, 3878, 3880, 3882, 3884, 3886, 3888, 3890, 3892, 3894, 3896, 3898, 3900, 3902, 3904, 3906, 3908, 3910, 3912, 3914, 3916, 3918, 3920, 3922, 3924, 3926, 3928, 3930, 3932, 3934, 3936, 3938, 3940, 3942, 3944, 3946, 3948, 3950, 3952, 3954, 3956, 3958, 3960, 3962, 3964